Claims

Claims 1-15 (canceled)

Claim 16 (Currently Amended): An endoluminal stent for delivering a bioactive agent to a situs in a body, comprising:

a plurality of vacuum deposited structural elements forming a radially expandable cylindrical member, the plurality of structural vacuum deposited elements including a complex finished geometry, each of the plurality of vacuum deposited structural elements having a wall thickness; wherein the vacuum deposited structural elements are fabricated of a metal ~~having microstructural properties characteristic of a vacuum deposited metal comprising~~ and comprise a base layer and a second layer covering the base layer, further comprising a void space intermediate the base and second layers that is ~~completely~~ enclosed therebetween;

a plurality of pores passing through the second layer and communicating with the void space such that the void space is open only through the plurality of pores; and

at least one bioactive agent retained within the void space and elutable through the plurality of pores.

Claims 17-19 (canceled)

Claim 20 (Previously presented): The endoluminal stent according to claim 16, further comprising a degradable plug residing within the plurality of pores to prohibit release of the at least one bioactive agent until the degradation of the degradable plug.

Claims 21-25 (canceled)

Claim 26 (Previously presented): The endoluminal stent according to claim 16, wherein the metal is selected from the group consisting of titanium, vanadium, aluminum, nickel, tantalum, zirconium, chromium, silver, gold, silicon, magnesium, niobium, scandium, platinum, cobalt, palladium, manganese, molybdenum and alloys thereof, including zirconium-titanium-tantalum alloys, nitinol, and stainless steel.

Claim 27 (Previously presented): The endoluminal stent according to claim 16, wherein the bioactive agent further comprises a pharmacologically active agent selected from the group consisting of antibiotic drugs, antiviral drugs, neoplastic agents, steroids, fibronectin, anti-clotting drugs, anti-platelet function drugs, drugs which prevent smooth muscle cell growth on inner surface wall of vessel, heparin, heparin fragments, aspirin, coumadin, tissue plasminogen activator, urokinase, hirudin, streptokinase, antiproliferatives, methotrexate, cisplatin, fluorouracil, adriamycin, antioxidants, ascorbic acid, beta carotene, vitamin E, antimetabolites, thromboxane inhibitors, non-steroidal and steroidal anti-inflammatory drugs, immunosuppresents, such as rapomycin, beta and calcium channel blockers, genetic materials including DNA and RNA fragments, complete expression genes, antibodies, lymphokines, growth factors, vascular endothelial growth factor and fibroblast growth factor, prostaglandins, leukotrienes, laminin, elastin, collagen, nitric oxide, and integrins.

Claim 28 (Previously presented): The endoluminal stent according to claim 16, wherein the void space comprises a plurality of independent internal cavities along the length of the structural elements.

Claim 29 (Cancelled)

Claim 30 (Previously presented): The endoluminal stent according to claim 16, wherein the metal of the first and second layers has at least one surface thereof having controlled heterogeneities thereupon.

Claim 31 (Previously presented): The endoluminal stent according to claim 30, wherein the controlled heterogeneities are selected from the group consisting of grain size, grain phase, grain material composition and surface topography.

Claim 32 (Previously presented): The endoluminal stent according to Claim 30, wherein the controlled heterogeneities define polar and non-polar binding sites for binding blood plasma proteins.

Claim 33 (Previously presented): The endoluminal stent according to Claim 30, wherein the controlled heterogeneities are dimensioned to have a blood contact surface area substantially similar in size as endothelial cell surface integrin clusters.

Claim 34 (Previously presented): The endoluminal stent according to Claim 30, wherein the controlled heterogeneities define cell-adhesion domains having interdomain boundaries less than the surface area of a human endothelial cell.

Claim 35 (Previously presented): The endoluminal stent according to Claim 30, wherein the controlled heterogeneities form binding domains having a repeating pattern with no more than about 2 μm border to border spacing between adjacent binding domains.

Claim 36 (Previously presented): The endoluminal stent according to Claim 30, wherein the controlled heterogeneities are dimensioned to have a blood contact surface area of about less than 6 μm^2.

Claim 37 (Previously presented): The endoluminal stent according to Claim 30, wherein the controlled heterogeneity has a blood contact surface less than or equal to about 10 μm and an inter-heterogeneity boundary between about 0 and 2 μm.